

ABSTRACT

An annular co-extrusion die for extruding multi-layer tubular plastic film has inner die members stacked one upon another and having radially outwardly extending surfaces forming radially outwardly extending helical passages between respective pairs of inner die members. An annular outer die member surrounds the stacked inner die members and forms a longitudinally extending annular passage therebetween for conveying plastic material from the radially outwardly extending helical passages to an annular extrusion orifice. A lower inner die member has a first feed passage extending from a lower surface thereof to a substantially horizontal upper surface thereof at a position spaced from a central longitudinal axis of the longitudinally extending annular passage, the substantially horizontal upper surface having a first groove extending from the upper end of the first feed passage to the longitudinal axis. An upper inner die member immediately above the lower inner die member has a substantially horizontal lower surface engaged with the substantially horizontal upper surface of the lower inner die member, the substantially horizontal lower surface having a second groove extending from the upper end of the first feed passage to the longitudinal axis and forming a second feed passage with the first groove. The upper inner die member has a third feed passage extending substantially vertically upwardly from the lower substantially horizontal surface thereof at the longitudinal axis and in communication with the second feed passage. At least one fourth feed passage in the upper inner die member extends from an upper end of the third feed passage to the helical passages between the upper and lower inner die members.